

U.S. Patent Application No. 10/071,841
Supplemental Amendment After Final dated March 31, 2005
Reply to Final Office Action of November 16, 2004

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A method of recovering metal and/or oxide thereof present in a slurry comprising steps (a) - (d):
 - (a) magnetically separating at least a portion of magnetic impurities present in said slurry from said slurry wherein said magnetically separating comprises applying a magnetic force of 2000 gauss or lower to said slurry in order to attract at least a portion of said magnetic impurities so that said slurry has at least a portion of remaining magnetic impurities and said metal and/or oxide thereof that is not magnetically separable at below 2,000 gauss;
 - (b) leaching or dissolving at least a portion of the remaining magnetic impurities in said slurry after step (a);
 - (c) adding at least one chelating agent to said slurry ~~after step (a) and/or (b)~~ at about the same time as step (b) or after step (b); and
 - (d) recovering solids comprising said metal and/or oxide thereof present in said slurry after step (c).
2. (original) The method of claim 1, further comprising forming a new slurry with the solids obtained from step (d).
3. (original) The method of claim 2, further comprising adding at least one surfactant to said new slurry.
4. (original) The method of claim 3, wherein said surfactant comprises sulphosuccinamate.
5. (original) The method of claim 1, wherein said magnetic impurities comprise iron.

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6. (original) The method of claim 1, wherein said metal and/or oxide thereof comprises at least one valve metal and/or oxide thereof.
7. (original) The method of claim 1, wherein said metal and/or oxide thereof comprises tantalum and/or oxide thereof.
8. (original) The method of claim 1, wherein said metal comprises tantalum and/or oxide thereof and said magnetic impurities comprise iron.
9. (original) The method of claim 1, wherein said chelating agent comprises citric acid.
10. (canceled)
11. (original) The method of claim 1, wherein said recovering solids is accomplished by the filtration of the slurry to recover said solids.
12. (original) The method of claim 1, wherein prior to magnetically separating, said slurry is subjected to a gravity separation.
13. (previously presented) The method of claim 2, wherein said new slurry is subjected to a flotation process to recover said metal from said new slurry.

Claims 14-16 (canceled)

17. (previously presented) Tailings obtained from ore comprising 250 ppm or less Ta_2O_5 in said tailings, wherein the ore is pegmatite, and wherein said tailings have a particle size of from about 1 micron to about 100 microns.
18. (original) The tailings of claim 17, wherein said tailings comprise 200 ppm or less Ta_2O_5 .
19. (original) The tailings of claim 17, wherein said tailings comprise from about 10 ppm to about 200 ppm Ta_2O_5 .

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20. (previously presented) Tailings obtained from ore comprising 250 ppm or less tantalum and/or oxide thereof in said tailings, wherein the ore is a tantalum bearing ore, and wherein said tailings have a particle size of from about 1 micron to about 100 microns.
21. (original) The tailings of claim 20, wherein said tantalum bearing ore contains at least about 0.025 wt% Ta₂O₅, based on the weight of the ore.
22. (original) The tailings of claim 20, wherein said tantalum bearing ore comprises one or more tantalum minerals.
23. (original) The tailings of claim 22, wherein said tantalum minerals comprise wodginitite, pyrochlore-microlite group, microlite, Simpsons site, colombo-tantalite group, tantalite, ixiolite, bismutite-tantalite, tapiolite, titano-wodginitite, rankamaite, or combinations thereof.
24. (original) The tailings of claim 20, wherein said tantalum bearing ore is carbonitite, apogranite, alkaline complex, pegmatitic granite, scarn, or combinations thereof.
25. (original) The tailings of claim 20, wherein said tailings comprise from about 10 ppm to about 100 ppm Ta₂O₅.
26. (original) The tailings of claim 20, wherein said tailings comprise from about 10 ppm to about 70 ppm Ta₂O₅.
27. (previously presented) A method of recovering metal and/or oxide thereof present in a slurry comprising:
- (a) magnetically separating at least a portion of magnetic impurities present in said slurry from said slurry;
 - (b) leaching or dissolving at least a portion of the remaining magnetic impurities in said slurry;
 - (c) adding at least one chelating agent to said slurry; and

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- (d) recovering solids comprising said metal and/or oxide thereof present in said slurry, wherein said metal and/or oxide thereof comprises tantalum and/or oxide thereof.
28. (previously presented) A method of recovering metal and/or oxide thereof present in a slurry comprising:
- (a) magnetically separating at least a portion of magnetic impurities present in said slurry from said slurry;
 - (b) leaching or dissolving at least a portion of the remaining magnetic impurities in said slurry;
 - (c) adding at least one chelating agent to said slurry; and
 - (d) recovering solids comprising said metal and/or oxide thereof present in said slurry, wherein prior to magnetically separating, said slurry is subjected to a gravity separation.
29. (previously presented) The tailings of claim 17, wherein said particle size is from about 1 micron to about 75 microns.
30. (previously presented) The tailings of claim 17, wherein said particle size is from about 5 microns to about 35 microns.
31. (previously presented) The tailings of claim 20, wherein said particle size is from about 1 micron to about 75 microns.
32. (previously presented) The tailings of claim 20, wherein said particle size is from about 5 microns to about 35 microns.
33. (previously presented) The method of claim 28, wherein said metal and/or oxide thereof is a valve metal and/or oxide thereof.

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34. (previously presented) The method of claim 1, wherein said metal and/or oxide thereof is tin, copper, nickel, lead, cobalt, or oxides thereof.
35. (previously presented) The method of claim 1, wherein said leaching or dissolving is achieved by the addition of one or more acids.
36. (previously presented) The method of claim 1, wherein said step (b) and step (c) occur at about the same time.
37. (previously presented) The method of claim 35, wherein said chelating agent and said acid are added at about the same time.
38. (previously presented) The method of claim 1, wherein said slurry has a pH of about 4 or lower throughout said method.
39. (previously presented) The method of claim 1, wherein said metal and/or oxide thereof has a particle size of from about 1 micron to about 100 microns.